

What is claimed is:

1. A method for authenticating security paper comprising:

placing an authenticating solution on at least one surface of said security paper, said
5 authenticating solution comprising an acid-base indicator in non-ionic form and having an
original pH; and

applying to said surface of said security paper an activating solution comprising
an acid or base selected to produce a characteristic color change of said acid-base indicator and
thereby authenticating said security paper, wherein said characteristic color change will
10 disappear when the activating solution dries.

2. The method as claimed in claim 1 wherein said acid-base indicator is colorless at said original
pH of said authenticating solution.

3. The method as claimed in claim 1 wherein the concentration of said acid-base indicator is less
than about 15 percent by weight.

4. The method as claimed in claim 1 wherein the concentration of said acid-base indicator is less
than about 5 percent by weight.

5. The method as claimed in claim 1 wherein said acid-base indicator is selected from
phenolphthalein, thymolphthalein, fluorescein, α -naphtholphthalein and o-cresolphthalein and
combinations thereof.

6. The method as claimed in claim 1 wherein said activating solution further comprises water.

7. The method as claimed in claim 6 wherein said base is selected from isopropylamine,
ethylamine, diethylamine, butylamine, 3-methoxy propylamine and ammonia and combinations
thereof.

8. The method as claimed in claim 7 wherein the concentration of said base is in the range of about 0.5 to 5 percent by weight.

5 9. The method as claimed in claim 6 wherein said base is selected from sodium hydroxide, potassium hydroxide and ammonia and combinations thereof.

10 10. The method as claimed in claim 9 wherein the concentration of said sodium hydroxide or potassium hydroxide is less than about 0.5 percent by weight and the concentration of said ammonia is less than about 5 percent by weight.

15 11. The method as claimed in claim 1 wherein said authenticating solution is placed on said security paper by printing.

20 12. The method as claimed in claim 11 wherein said authenticating solution is printed to form an invisible image on said security paper.

25 13. The method as claimed in claim 11 wherein said authenticating solution is printed to form a spot coating on said security paper.

30 14. The method as claimed in claim 11 wherein said authenticating solution is printed to form a full document flood coating on said security paper.

15. The method as claimed in claim 11 wherein said printing comprises flexographic printing.

25 16. The method as claimed in claim 1 wherein said authenticating solution further comprises a toner receptive component comprising a toner receptive polymer.

30 17. The method as claimed in claim 16 wherein said toner receptive polymer is selected from styrene-acrylic polymers, acrylic polymers, styrene-butadiene polymers, polyurethane polymers, starch grafted polymers and combinations thereof.

18. The method as claimed in claim 16 wherein said toner receptive polymer is selected from a styrene-acrylic with a Tg of about 15°C to about 50°C and an acid number of about 25 to about 75.

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19. The method as claimed in claim 16 wherein said authenticating solution is placed on said security paper by flexographic printing.

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20. The method as claimed in claim 1 wherein said authenticating solution further comprises a toner receptive component comprising a resin and an oil.

21. The method as claimed in claim 20 wherein said resin comprises a maleated phenolic modified resin.

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22. The method as claimed in claim 20 wherein said authenticating solution is placed on said security paper by letterpress printing.

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23. The method as claimed in claim 1 wherein said activating solution is contained in a pen and is applied to said security paper by marking with said pen.

24. A security paper authenticating system comprising:

a security paper having an authenticating solution on at least one surface of said security paper, said authenticating solution comprising an acid-base indicator in non-ionic form and having an original pH; and

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an activating solution comprising an acid or base selected to produce a characteristic color change of said acid-base indicator, wherein on applying the activating solution to said security paper a color change occurs that reverses when said activating solution dries.

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25. The system as claimed in claim 24 wherein said acid-base indicator is colorless at said original pH of said authenticating solution.

26. The system as claimed in claim 24 wherein the concentration of said acid-base indicator is less than about 15 percent by weight.

5 27. The system as claimed in claim 24 wherein the concentration of said acid-base indicator is less than about 5 percent by weight.

10 28. The system as claimed in claim 24 wherein said acid-base indicator is selected from phenolphthalein, thymolphthalein, fluorescein, α -naphtholphthalein and o-cresolphthalein and combinations thereof.

15 29. The system as claimed in claim 24 wherein said activating solution further comprises water as a carrier.

20 30. The system as claimed in claim 29 wherein said base is selected from isopropylamine, ethylamine, diethylamine, butylamine, 3-methoxy propylamine and ammonia and combinations thereof.

25 31. The system as claimed in claim 30 wherein said concentration of said base is in the range of 0.5 to 5 percent by weight.

32. The system as claimed in claim 29 wherein said base is selected from sodium hydroxide, potassium hydroxide and ammonia and combinations thereof.

30 33. The system as claimed in claim 32 wherein the concentration of said sodium hydroxide or potassium hydroxide is less than about 0.5 percent by weight and the concentration of said ammonia is less than about 5 percent by weight.

34. The system as claimed in claim 24 wherein said authenticating solution is placed on said security paper by printing.

35. The system as claimed in claim 34 wherein said printing comprises flexographic printing.

5 36. The system as claimed in claim 24 wherein said authenticating solution forms an invisible image.

37. The system as claimed in claim 24 wherein said authenticating solution is on said security paper as a spot coating.

10 38. The system as claimed in claim 24 wherein said authenticating solution is on said security paper as a full document flood coating.

39. The system as claimed in claim 24 wherein said authenticating solution further comprises a toner receptive component comprising a toner receptive polymer.

40. The system as claimed in claim 39 wherein said toner receptive polymer is selected from styrene-acrylic polymers, acrylic polymers, styrene-butadiene polymers, polyurethane polymers, starch grafted polymers and combinations thereof.

20 41. The system as claimed in claim 39 wherein said toner receptive polymer is selected from a styrene-acrylic with a Tg of about 15°C to about 50°C and an acid number of about 25 to about 75.

25 42. The system as claimed in claim 39 wherein said authenticating solution is placed on said security paper by flexographic printing.

43. The system as claimed in claim 24 wherein said authenticating solution further comprises a toner receptive component comprising a resin and an oil.

44. The system as claimed in claim 43 wherein said resin comprises a maleated phenolic modified resin.

5 45. The system as claimed in claim 43 wherein said authenticating solution is placed on said security paper by letterpress printing.

46. The system claimed in claim 24 wherein said activating solution is contained in a pen and is applied to said security paper by marking with said pen.

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